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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,587	09/05/2003	Murat Karaorman	TI-35488 (1962-06500)	7924

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EXAMINER	
GEIB, BENJAMIN P	

ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,587	KARAORMAN, MURAT	
	Examiner	Art Unit	
	Benjamin P. Geib	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9,11-16,19,21-26 and 29* is/are rejected.

7)☒ Claim(s) *7,8,10,17,18,20,27,28 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Ftzm. Fleming
FRITZ FLEMING
Supervisory PRIMARY EXAMINER
GROUP 2100
6/26/2006
AU 2181

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/25/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-30 have been examined.

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Application on 09/05/2003, Preliminary Amendment on 10/06/2003, and Information Disclosure Statement on 11/25/2003.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-6, 9, 11-16, 19, 21-26 and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by Wan et al., Design and Implementation of an eXpressDSP-Complient DMA Manager for C6X1X (Herein referred to as Wan).

5. Referring to claim 1, Wan has taught a system, comprising:

a processor that executes an algorithm *[C6x1x DSP; Introduction]*;

a hardware unit *[DMA controller]* that comprises one or more physical resources *[DMA channels; Introduction]*; and

an abstraction layer *[ACPY2 Interface]* implemented by said processor that facilitates communication between the algorithm and the hardware unit through the use of a plurality of functions and that creates a reference *[handle]* to a logical resource *[logical channel; IDMA2_Obj; section 3.2]* that is associated with a corresponding

physical resource *[physical channel]*, wherein each logical resource is associated with at least one private state *[channel configuration parameters]* that represents the most recently configured settings of the logical resource *[section 3.2]*.

6. Referring to claim 2, Wan has taught the system of claim 1 wherein the reference comprises a pointer to the logical resource *[section 3.2]*.

7. Referring to claim 3, Wan has taught the system of claim 1 wherein the plurality of functions are selected from the group consisting of command functions that request and grant the identifier to the algorithm *[ACPY2_initChannel(); See ACPY2_initChannel() description on page 16]*, configuration functions that pre-compute and store register values and algorithm settings *[ACPY2_configure, ACPY2_setNumFrames() ACPY2_setSrcFrameIndex() ACPY2_setDstFrameIndex(); See function descriptions on pages 17, 21, 21, and 22 respectively]*, synchronization functions that align the logical resource with the physical resource *[ACPY2_start(); first 3 paragraphs of section 3.2.9]*, and a combination thereof *[See Table 2]*.

8. Referring to claim 4, Wan has taught the system of claim 1 wherein the plurality of functions comprise command functions that request and grant the identifier to the algorithm *[ACPY2_initChannel(); See ACPY2_initChannel() description on page 16]*.

9. Referring to claim 5, Wan has taught the system of claim 4 wherein the command functions comprise a function that monitors the physical resources and updates a corresponding vector table *[TCC Table; Fig. 6]* that associates the reference to a logical resource with a memory location of function optimized for a current operation *[ACPY2_start(); 5th paragraph of section 3.2.9]*.

10. Referring to claim 6, Wan has taught the system of claim 4 wherein the command functions comprise a function *[ACPY2_startAligned()]* that does not write to a register *[parameters structure in memory]* associated with the physical resource if a previous use of the physical resource has left the register in a state compatible with a current operation *[ACPY2_startAligned() assumes the parameters structure is in a state compatible with a current operation and does not write to it; 3rd and 5th paragraphs of section 3.2.9]*.

11. Referring to claim 9, Wan has taught the system of claim 1 wherein the plurality of functions are selected from the group comprise configuration functions that pre-compute and store register values and system state settings *[ACPY2_configure, ACPY2_setNumFrames() ACPY2_setSrcFrameIndex() ACPY2_setDstFrameIndex(); See function descriptions on pages 17, 21, 21, and 22 respectively]*.

12. Referring to claim 11, Wan has taught a method for achieving high-performance hardware abstraction, comprising:

creating a reference *[handle]* to a logical resource *[logical DMA channel; IDMA2_Obj; section 3.2]* that is associated with a corresponding physical resource *[physical DMA channel; Introduction]*;

associating with the logical resource one or more private states *[channel configuration parameters]* that represents the most recently configured settings of the logical resource *[section 3.2]*; and

executing a plurality of functions that facilitate communication between the physical resource and an algorithm *[See Table 2; section 3.2]*.

13. Referring to claim 12, given the similarities between claim 2 and claim 12 the arguments as stated for the rejection of claim 2 also apply to claim 12.

14. Referring to claim 13, given the similarities between claim 3 and claim 13 the arguments as stated for the rejection of claim 3 also apply to claim 13.

15. Referring to claim 14, given the similarities between claim 4 and claim 14 the arguments as stated for the rejection of claim 4 also apply to claim 14.

16. Referring to claim 15, given the similarities between claim 5 and claim 15 the arguments as stated for the rejection of claim 5 also apply to claim 15.

17. Referring to claim 16, given the similarities between claim 6 and claim 16 the arguments as stated for the rejection of claim 6 also apply to claim 16.

18. Referring to claim 19, given the similarities between claim 9 and claim 19 the arguments as stated for the rejection of claim 9 also apply to claim 19.

19. Referring to claim 21, Wan has taught a storage medium comprising software that performs one or more operations that facilitate communication between a hardware unit and an algorithm, said software comprising:

instructions that create a reference *[handle]* to a logical resource *[logical DMA channel; IDMA2_Obj; section 3.2]* that is associated with a physical resource *[physical DMA channel]* of the hardware unit *[DMA controller; Introduction]*; and

instructions that associate with the logical resource at least one private state *[channel configuration parameters]* that represents the most recently configured settings of the logical resource *[section 3.2]*.

20. Referring to claim 22, given the similarities between claim 2 and claim 22 the arguments as stated for the rejection of claim 2 also apply to claim 22.

21. Referring to claim 23, given the similarities between claim 3 and claim 23 the arguments as stated for the rejection of claim 3 also apply to claim 23.

22. Referring to claim 24, given the similarities between claim 4 and claim 24 the arguments as stated for the rejection of claim 4 also apply to claim 24.

23. Referring to claim 25, given the similarities between claim 5 and claim 25 the arguments as stated for the rejection of claim 5 also apply to claim 25.

24. Referring to claim 26, given the similarities between claim 6 and claim 26 the arguments as stated for the rejection of claim 6 also apply to claim 26.

25. Referring to claim 29, given the similarities between claim 9 and claim 29 the arguments as stated for the rejection of claim 9 also apply to claim 29.

Allowable Subject Matter

26. Claims 7, 8, 10, 17, 18, 20, 27, 28, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

27. The following is text cited from 37 CFR 1.111(c): In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or

patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Boike, U.S. Patent No. 6,959,439, teaches an abstraction layer that facilitates communication between an Operating System and the underlying platform.

Ruget et al., U.S. Patent Application Publication No. 2003/0233487, teaches an abstraction layer for a hardware device.

Odom, U.S. Patent No. 6,941,390, teaches a method of configuring virtual DMA channels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin P. Geib whose telephone number is (571) 272-8628. The examiner can normally be reached on Mon-Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin P Geib
Examiner
Art Unit 2181

Supervisory

FRITZ FLEMING
PRIMARY EXAMINER
GROUP 2100

6/16/2006

AU 2181